US Army Corps of Engineers

Jagwire™

BUILDING STRONG®

Description: Jagwire™[1] (Image Access Solutions (IAS) V. 6.2) is a video and data management and dissemination software tool used for capturing, indexing, archiving, searching, and delivering various forms of geospatial intelligence and accompanying metadata. It can process a range of data formats including: Full Motion Video (FMV), Wide Area Motion Imagery (WAMI), high resolution still imagery (e.g., BuckEye), Digital Elevation Models (DEMs), Light Detection and Ranging (LiDAR) point clouds, and Ground Moving Target Indicators (GMTI) data. All of the data formats ingested into Jagwire™ are available to both high and low bandwidth users; providing advanced exploitation and/or situational awareness support to the respective users. Jagwire™ provides data management and dissemination for a wide range of standard and WAMI imagery components by using JPEG 2000 (J2K) open standard wavelet-based compression algorithm and J2K Interactive Protocol (JPIP). Catalogued data types are readily identifiable and accessible using this rapid image delivery system that is compliant with commercial and Department of Defense (DoD) standards. Jagwire™'s unique web-based, net-centric, standards compliant solution also permits capturing, storing and disseminating other complex datasets as well to include: FMV from manned and unmanned Intelligence, Surveillance, and Reconnaissance (ISR) and ground based sensors.

Search and discovery results are immediately viewable through website-integrated display software (see below). The data collected resides in conglomerated data catalogs, allowing for more efficient dissemination in a network with multiple users. Current federation nodes include 480th Langley Air Force Base, Army Geospatial Center (AGC), and soon-to-be activated Beale Air Force Base. Additional Jagwire™ information highlights include:

- **Federated Architecture**: Jagwire™ allows geographically dispersed organizations to gain near real-time access to the same federated data holdings collected from a broad range of orbital and fixed-wing sources and supports virtually any data type, including live video feeds, satellite imagery archives, LiDAR point clouds, and vector data types. Jagwire's ™advanced discovery and filtering capabilities permits users to quickly identify data types and critical intelligence. The federated architecture provides users with complete data holdings accessibility; when data is made available in one point of the system, it is immediately discoverable throughout the system.

- **Bandwidth Agnostic**: In addition to the real-time ingest of multiple live feeds, Jagwire™ uses variable bit-rate transcoding that lets all classes of users view the same images, whether in a command center or in a remote forward operating location – enabling faster, smarter decisions.

- **JPIP Visualization Streaming:** Jagwire™provides rapid access and visualization of raw unexploited image data and derived image products to users in seconds using JPEG 2000 (J2K) open standard wavelet-based compression algorithm and J2K Interactive Protocol (JPIP). Jagwire™ delivers imagery and data management for a wide range of standard and Wide Area Motion Imagery (WAMI) sources. Users can quickly identify data using a rapid, image delivery system that is compliant with commercial standards. Jagwire enables format conversion and specialized processing of unique or complex datasets. Visualization is available immediately upon receipt of the search and discovery results and includes the following integrated viewers:
    - **Enterprise Viewer** is a JPEG2000 Internet Protocol (JPIP) compliant viewer that allows users to open, view, and work with JPEG2000 (J2K) compatible images.
    - **Digital Point Cloud Viewer** enables 3D streaming visualization of LIDAR point cloud datasets.

- **Jagwire™ Ingestion Formats**: Jagwire™ can ingest and process a range of data formats to give low bandwidth users access to situational awareness. Ingest data include the following formats:
    - NITF 2.0, NITF 2.1, GeoTIFF, NSIF, JPEG, JPEG 2000
    - Motion imagery captured from Wide Area Motion Imagery (WAMI) and Full Motion Video (FMV) platforms
    - Airborne and Terrestrial LiDAR LAS or LAZ files

[1] Jagwire™ is Harris COTs-owned software. Informational content derived from Harris-provided documentation.

- Rapid Delivery of Geospatial Intelligence (RDOG) images
- ENVI standard format files

The Army Geospatial Center (AGC) Jagwire™ / IAS system node is intended to ingest BuckEye geospatial data, convert the data to a format suitable for low bandwidth dissemination (if it is not natively in such a format) and make those assets available for discovery globally by any end-user that has a Secret Internet Protocol Router Network (SIPRNET) account. The data to be ingested consists of three categories: 1 – Still Imagery, 2 – Digital Elevation Models, 3 – Point Clouds. Across the three types of assets, there are five specific primary data sets that will be ingested:

- 1. Still Imagery "Orthophotos"
- 2. Digital Elevation Models – Buckeye Sensor
- 3. Digital Elevation Models – HALOE Sensor
- 4. LiDAR Point Clouds – Buckeye Sensor
- 5. LiDAR Point Clouds – HALOE Sensor

Initial data holdings include BuckEye coverage data over the Philippines (imagery and LiDAR) and Iraq HALOE point cloud data.Use the following link to access the AGC Jagwire™ BuckEye: https://jagwire.agc.army.smil.mil

In addition to the AGC Jagwire™ BuckEye holdings, the federation architecture provides AGC users access to all data holdings (NTM, Airborne, Commercial, OBC) that are stored on the Langley and soon-to-be activated Beale Jagwire™/IAS systems. The Langley Jagwire™/IAS node is currently holding over 1.2 million imagery assets and is directly accessible at: https://jagwire.480iw.langley.af.smil.mil.

AGC Jagwire™ Points of Contact

David Brierly, (Project Lead)
David.J.Brierly@usace.army.mil;
COMM: (703) 428-7420
Elaine Nguyen (Server and Client Software)
elaine.nguyen.civ@mail.smil.mil
COMM: (703) 428-7803

U.S. ARMY CORPS OF ENGINEERS – ARMY GEOSPATIAL CENTER
7701 TELEGRAPH ROAD
ALEXANDRIA, VA 22315

www.agc.army.mil*www.agc.army.smil.mil*www.agc.ic.gov